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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/755,033	01/09/2004	David J. Holloway	12094U (COM)	7882
7590	09/20/2005			
Leo Stanger 382 Springfield Ave. P.O. Box 1455 Summit, NJ 07901			EXAMINER CHEN, SHIH CHAO	
			ART UNIT 2821	PAPER NUMBER

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/755,033

Applicant(s)

HOLLOWAY ET AL.

Examiner

Shih-Chao Chen

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 18 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24 is/are allowed.
- 6) ☒ Claim(s) 1-17, 19-23 and 25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 16 is objected to because of the following informalities: in line 3, "a has an inverted cup cover" should be changed to --has an inverted cup cover--. Appropriate correction is required.
2. Claim 6 is objected to because of the following informalities: in line 1, "a system" should be changed to --the system--. Appropriate correction is required.
3. Claim 17 is objected to because of the following informalities: in lines 1-2, "said harmonic suppression filter" should be changed to --said suppression filter--.  
Appropriate correction is required.
4. Claims 19-21 are objected to because of the following informalities: in lines 1-2, "said harmonic suppression filter" should be changed to --said suppression filter--.  
Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
7. Claim 3 recites the limitation "the second filter section" in lines 7-8 or line 9.  
  
There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

9. Claims 1-2, 4-9, 12-17, 22-23 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Stites et al. (U.S. Patent No. 5,610,620).

Regarding claim 1, Stites et al. teaches in figures 1-4 an aircraft antenna (10), comprising: an aerodynamic housing structured (74) for attachment to an outer surface of an aircraft (See Abstract); a system [18, 19] in the housing, the system having an electromagnetic radiator (54, 20) and being tuned over a first band of frequencies potentially to produce secondary radiations in at least a second band of frequencies; the system having a suppression filter (i.e. notch filter, See FIG. 4) effective at frequency of the secondary radiations; the suppression filter including a band pass filter [70, 66].

Regarding claim 2, Stites et al. teaches in figures 1-4 an aircraft antenna (10) as in claim 1, wherein the secondary radiations include harmonics of frequencies in the first band and the suppression filter is a harmonic suppression filter of the harmonics (See FIG. 4).

Regarding claim 4, Stites et al. teaches in figures 1-4 an aircraft antenna (10) as in claim 1, wherein the suppression filter is a low pass filter [62, 55].

Regarding claim 5, Stites et al. teaches in figures 1-4 an aircraft antenna (10) as in claim 2, wherein the second band of frequencies includes the frequencies of GPS (i.e. GPS patch element/radiator).

Regarding claim 6, Stites et al. teaches in figures 1-4 an aircraft antenna (10)

Art Unit: 2821

as in claim 5, wherein the system [18, 19] includes a capacitance compensating inductor [66, 70] at the input of the harmonic suppression filter.

Regarding claim 7, Stites et al. teaches in figures 1-4 an aircraft antenna (10) as in claim 2, wherein the suppression filter is a band pass filter [70, 66].

Regarding claim 8, Stites et al. teaches in figures 1-4 an aircraft antenna (10) as in claim 2, wherein harmonic suppression filter includes discrete components (See FIG. 4).

Regarding claim 9, Stites et al. teaches in figures 1-4 an aircraft antenna (10) as in claim 8, wherein the harmonic suppression filter includes a distributed component filter (See FIG. 4).

Regarding claim 12, Stites et al. teaches in figures 1-4 an aircraft antenna (10) as in claim 1, wherein the system (18, 19) includes a second electromagnetic radiator (20) in the housing (74) and tuned over the second band of frequencies.

Regarding claim 13, Stites et al. teaches in figures 1-4 an aircraft antenna (10) as in claim 12, wherein the second radiator (20) is a patch radiator and the first radiator is a cable radiator.

Regarding claim 14, Stites et al. teaches in figures 1-4 an aircraft antenna (10) as in claim 12, wherein the second radiator (20) is a patch radiator and the first radiator is a cable radiator, and the secondary radiations are harmonics of frequencies in the first band.

Regarding claim 15 Stites et al. teaches in figures 1-4 an aircraft antenna (10)

Art Unit: 2821

as in claim 12, wherein the second radiator (20) is a patch radiator and the first radiator [54] is a cable radiator, and the patch radiator operates at a band of frequencies that includes the frequencies of one of GPS (i.e. GPS patch element/radiator).

Regarding claim 16, Stites et al. teaches in figures 1-4 an aircraft antenna (10) as in claim 12, wherein the housing (74) has an elongated shape to project from the surface of an aircraft and surrounding the cable radiator (54) and has an inverted cup cover (44) surrounding the patch radiator (20) and the filter (See FIG. 4) at the base (12) of the elongated shape.

Regarding claim 17, Stites et al. teaches in figures 1-4 an aircraft antenna (10) as in claim 25, wherein the suppression filter is a notch filter (See FIG. 4).

Regarding claim 22, Stites et al. teaches in figures 1-4 an aircraft antenna (10) as in claim 12, wherein the system (18, 19) includes a base (12) orienting the radiators (20, 54) into mutually limited coupled positions.

Regarding claim 23, Stites et al. teaches in figures 1-4 an aircraft antenna (10) as in claim 12, wherein the second radiator (20) is a patch radiator and the first radiator (54) is a cable radiator, and the secondary radiations are harmonics of frequencies in the first band; and the patch radiator (20) has a rectangular shape and the filter (See FIG. 4) is placed at the tip of the rectangular shape of the patch radiator.

Regarding claim 25, Stites et al. teaches in figures 1-4 an aircraft antenna (10), comprising: an aerodynamic housing structured (74) for attachment to an outer surface of an aircraft (See Abstract); a system (18, 19) in the housing, the system having an electromagnetic radiator (54, 20) and being tuned over a first band of frequencies

Art Unit: 2821

potentially to produce secondary radiations in at least a second band of frequencies; the system having a suppression filter (i.e. notch filter, See FIG. 4) effective at frequency of the secondary radiations; the suppression filter including a plurality of filter sections(See FIG. 4).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 10-11 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stites et al. (Cited above) in view of Arevato (U.S. Patent No. 6,147,576).

Stites et al. teaches every features of the claimed invention in paragraph 9, except for the microstrip notch filter (i.e. the notch filter includes a circuit board).

Arevato teaches in figures 2-4 the microstrip notch filter (214).

In view of the above statement, It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the notch filter as shown in Stites et al. by using the microstrip notch filter as taught by Arevato in order to its electromagnetic response is determined by its dimensions (See col. 4, lines 8-11).

***Allowable Subject Matter***

12. Claim 24 is allowed.

Art Unit: 2821

13. The following is a statement of reasons for the indication of allowable subject matter: See Office Action mailed on May 13, 2005.

***Response to Arguments***

14. Applicant's arguments filed July 27, 2005 have been fully considered but they are not persuasive.

Applicant argues that the Stites patent fails to suggest system having a suppression filter effective at a frequency of the secondary radiation and including a low pass filter nor a plurality of filter sections in the suppression filter. This argument is not deemed to be persuasive because Stites teaches in figure 4, the suppression filter (i.e. notch filter) effective at a frequency of the secondary radiation and including a low pass filter (62, 55) and a plurality of filter sections (i.e. first order section and second order section) in the suppression filter.

***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any



Art Unit: 2821

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-Chao Chen whose telephone number is (571) 272-1819. The examiner can normally be reached on Monday-Friday from 7 AM to 4:30 PM, First Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Shih-Chao Chen*  
Shih-Chao Chen  
Primary Examiner  
Art Unit 2821

**SHIH-CHAO CHEN**  
**PRIMARY EXAMINER**

SXC  
September 16, 2005